The identities of *Cineraria microglossa* DC. and *C. spinulosa* Lam. (Compositae-Senecioneae) from South Africa

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Abstract

Cineraria microglossa DC., a South African taxon known only from the type collection by Drège, is shown to be conspecific with *Mesogramma apiifolium* DC., until recently better known as *Senecio apiifolius* (DC.) Benth. & Hook. f. ex O. Hoffm. *Mesogramma* DC. is a monotypic genus with a wide distribution from south Angola through Namibia and Botswana to northern Cape Province and the Orange Free State.

Cineraria spinulosa Lam. is shown to be a synonym of *Othonna parviflora* Bergius, a species distributed in the southwestern Western Cape Province including the Cape Peninsula.

Introduction

Recent monographic work on the African genus *Cineraria* L. (Compositae-Senecioneae) has refined the circumscription of the genus as a monophyletic and well characterized genus with 35 species (Cron 2005, Cron et al. 2006a). Fourteen species had to be removed from the genus, four to the new genera *Bolandia* Cron (Cron et al. 2006b) and *Oresbia* Cron & B. Nord. (Cron & Nordenstam 2006), three transferred to *Senecio* (Cron 2005, Cron et al. 2006a), whereas seven names remained unresolved as to identity and generic affiliation. Two of these will be discussed here.

One of the species with unresolved affinity was *C. microglossa* DC., described by De Candolle in 1838 and known only from the type collection by J. F. Drège from the Gariep (i.e. the lower Orange River) region in the Northern Cape Province. Harvey

(1865) accepted the species in his section (§) *Eu-Cineraria* although with the remark, "Unknown to me". He cited De Candolle's description including the notion that the ray achenes are compressed. This observation needs qualification, however, as will be discussed below.

A second species of unknown affinity was C. *spinulosa* Lam., which was not cited by Harvey (1865) or any subsequent authors. Its identity has remained obscure until now.

Discussion

1) ***Cineraria microglossa*** DC., Prodr. 6: 305 (1838). – Type: South Africa, Northern Cape, in the Gariep region, Drège 5926 (G-DC! holo., K! P! iso.). Fig. 1.

An examination of the type material of *C. microglossa* DC. suggested that it might be conspecific with *Mesogramma apiifolium* DC., a widespread annual herb from southern Africa. Until recently this taxon has been known in literature and herbaria as *Senecio apiifolius* (DC.) Benth. & Hook. f. ex O. Hoffm., but it has now been restored as a monotypic genus only distantly related to *Senecio* s. str. (Nordenstam & Pelser 2005).

Among the characteristics of *Mesogramma* are the resiniferous capitula with black-lined involucral bracts and midlined disc-floret corolla lobes, and the black cypselas with distinct lines of white hairs. Nordenstam & Pelser (2005) stated the number of such lines to be three, but our examination of fully ripe cypselas revealed the number to vary between three and four. The cypselar hairs are short and obtuse duplex trichomes, which become mucilaginous when wet. The cypselas are often triquetrous or nearly quadrangular, often slightly curved and a little compressed, but quite unlike the distinctly compressed cypselas of true *Cinerarias*.

The original material of *C. microglossa* agrees in all essential details with *Mesogramma apiifolium* and they are clearly the same species. Both names were published in De Candolle's *Prodromus* vol. 6, and their types were collected by J. F. Drège in the same area, viz. the lower Orange River, forming the border between Namibia and Namaqualand in South Africa. Since the names were published simultaneously, *Mesogramma apiifolium* remains the correct name for this taxon, and *C. microglossa* DC. goes into synonymy. *Mesogramma apiifolium* has a rather wide and scattered distribution range from southern Angola and Botswana through Namibia to the northern parts of South Africa (Map in Nordenstam & Pelser 2005, Fig. 4).

The closest relative of *Mesogramma* is no doubt the recently described genus *Bolandia* Cron (Cron et al. 2006b), which shares the herbaceous habit, the

resiniferous capitula, and the black cypselas with white myxogenic duplex trichomes. This relationship is also strongly supported by molecular (ITS) data, which also place a closely linked *Mesogramma-Bolandia* subclade as sister to *Cineraria*. The *Mesogramma-Cineraria* clade in turn relates to a clade comprising *Pericallis, Emilia* and *Packera*, quite distant from *Senecio* s. str. in the phylogenetic tree (Nordenstam & Pelser 2005, Pelser et al. in press.).

2) ***Cineraria spinulosa*** Lam., Encycl. 2: 9 (1786). – Lectotype (designated here): Africa, Sonnerat, Herb. Lamarck No. P342408(P-LA!). Fig. 2. – Note. The original material in P consists of two specimens in Herb. Lamarck and one specimen in Herb. Jussieu (Cat. No. 8989), all annotated by Lamarck. One of the former specimens is annotated "D'Afrique" and "S." (= Sonnerat), and is selected as lectotype. Lamarck in his description refers to Sonnerat as purveyor of material.

This is clearly a species of *Othonna*, and we regard it as conspecific with *O. parviflora* Bergius, a species from the southwestern region of the Western Cape Province, including the Cape Peninsula. The type specimen of *Cineraria spinulosa* has sessile and amplexicaul leaves, which are obovate to spathulate with denticulate margins. The capitula are numerous and small, with involucral bracts ca. 8 and basally connate. These characters agree well with the original material of *O. parviflora* in the Bergius Herbarium: "e Cap. b. spei, Grubb, *Othonna mihi parviflora*" /Bergius scripsit/ (SBT! no. 4.3.9.99, holo.).

Othonna parviflora Bergius was published in the *Plantae capenses: Descriptiones plantarum ex Capite bonae spei* in Sept. 1767 and thus antedates *O. parviflora* L., Mant. 1: 89 (Nov. 1767). The latter illegitimate name is a synonym of *O. quinquedentata* Thunb., a species closely related to *O. parviflora* Bergius, but regarded as distinct.

Confusion regarding the synonymy of *Othonna parviflora* Bergius and *O. rigens* (L.) Levyns ex Adamson & Salter (1950) has been perpetuated in the literature (see Bond & Goldblatt 1984, Arnold & De Wet 1993, Goldblatt & Manning 2000, Herman 2003). *Othonna rigens* (L.) Levyns was published without a basionym citation, but even if regarded as validly published (based on *Senecio rigens* L.), the name is illegitimate as a later homonym (of *O. rigens* L., syn. *Gorteria rigens* L., now *Gazania rigens* (L.) Gaertn.; cf. Nordenstam 1961), and *O. amplexicaulis* Thunb. is the useful name for the taxon intended. The confusion may have arisen due to Levyns' (1941: 143) referral to both homonyms for *O. parviflora* in a single paragraph, despite the correct use of names/identities in Nordenstam (1967).

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References

Adamson, R. S. & T. M. Salter 1950. *Flora of the Cape Peninsula.* Juta & Co., Cape Town, Johannesburg.

Arnold, T. H. & B. C. De Wet (eds.) 1993. Plants of southern Africa: Names and distribution. *Mem. Bot. Surv. S. Africa* 62. National Botanical Institute, Pretoria.

Bond P. & P. Goldblatt 1984. Plants of the Cape Flora. *J. S. Afr. Bot., Suppl. Vol.* 13.

Cron, G. V. 2005. *Cineraria L. (Senecioneae, Asteraceae) - its Taxonomy, Phylogeny, Phytogeography and Conservation.* Unpublished Ph.D. Thesis. University of the Witwatersrand, Johannesburg.

Cron, G. V., Balkwill, K. & E. B. Knox 2006a. A revision of *Cineraria* (Asteraceae, Senecioneae). *Kew Bull.* 61: 449–535 .

Cron, G. V., Balkwill, K. & E. B. Knox 2006b. *Bolandia* (Senecioneae, Asteraceae): A new genus endemic to southern Africa. *Novon* 16: 224–230.

Cron, G. V. & B. Nordenstam 2006. *Oresbia*, a new South African genus of the Asteraceae-Senecioneae. *Novon* 16: 216–223.

Goldblatt, P. & J. Manning 2000. Cape Plants: A conspectus of the Cape Flora of South Africa. *Strelitzia* 9. National Botanical Institute, Pretoria; MBG Press, Missouri Botanical Garden, St.Louis.

Harvey, V. H. 1865. Compositae, Juss. *In*: Harvey, W. H. & O. W. Sonder (eds.), *Flora Capensis* 3(1): 44–530. Hodges, Smith & Co., Dublin; I.C. Juta, Capetown.

Herman, P. P. H. 2003. *Othonna* L. *In*: Germishuizen, G. & N. L. Meyer (eds.), Plants of southern Africa: an annotated checklist. *Strelitzia* 14: 267–271. National Botanical Institute, Pretoria.

Levyns, M. R. 1941. Notes on some species of *Othonna*. *J. S. Afr. Bot.* 7: 139–143.

Nordenstam, B. 1961. Notes on some Linnaean dissertations. *Bot. Notiser* 114: 276–280.

Nordenstam, B. 1967. Chromosome numbers in *Othonna* (Compositae). *Bot. Notiser* 120: 297–304.

Nordenstam, B. & P. Pelser 2005. *Dauresia* and *Mesogramma*: one new and one resurrected genus of the Asteraceae-Senecioneae from Southern Africa. *Comp. Newsl.* 42: 74–88.

Pelser, P., Nordenstam, B., Kadereit, J. W. & L. E. Watson in press. An ITS phylogeny of tribe Senecioneae (Asteraceae) and a new delimitation of *Senecio* L. *Taxon.*

Fig. 1.

Types of *Cineraria microglossa* DC. Drège 5926 (A) isotype P; (B, C) holotype G-DC, (B) portion of specimen, (C) detail of label. Scale bars: A. 7.5 mm; B. 9 mm.

Fig. 2.

Lectotype of *Cineraria spinulosa* LAM., D'Afrique, SONNERAT s.n. (P-LA, P342408); Inset: details of label. Scale bar: 16.5 mm.